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NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE ACT OF 1977

95-1

HEARING

BEFORE THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION UNITED STATES SENATE

NINETY-FIFTH CONGRESS

FIRST SESSION

ON

S. 1347

TO CREATE A NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE, AND FOR OTHER PURPOSES

MAY 2, 1977

Serial No. 95-21

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NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE ACT OF 1977

MONDAY, MAY 2, 1977

U.S. SENATE,
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION,
Washington, D.C.

The committee met at 9:30 a.m. in room 5110, Dirksen Senate Office Building, Hon. Ernest F. Hollings presiding.

OPENING STATEMENT BY SENATOR HOLLINGS

Senator HOLLINGS. The subject of this morning's hearing is the National Advisory Committee on Oceans and Atmosphere (NACOA), a unique and independent group which provides expert advice to both the Congress and the Executive. The present authorization for the Advisory Committee ends this coming September, and we are here today to discuss NACOA's future organization and funding.

In the years since NACOA was established in 1971, it has prepared five annual reports, written four special reports, and given advice to both Houses of Congress and to several executive agencies. In many cases, NACOA has done its job well, and its members and staff have worked hard and with distinction.

However, as I have reviewed the committee, I have asked, of course, if there are ways to improve the operation, contributions and influence of this group. After examining the mattter, I introduced S. 1347, a bill to repeal the existing NACOA Act and to create a new, and I hope, strengthened, Advisory Committee. I hope that we can discuss this bill in depth during today's hearing.

S. 1347 has been written with several objectives in mind. First, the Advisory Committee is continued, so that Congress and the Executive still will have an independent source of information and advice about oceanic and atmospheric matters.

Second, to hold down costs the bill keeps NACOA's funding at the present level of $445,000 a year, and reduces the number of Advisory Committee members from 25 to 15.

Third, the bill contains a more explicit set of qualifications for NACOA members, in order to clarify Congress, desire for members who are experts or otherwise very experienced in oceanic and atmospheric matters.

And, four, S. 1347 directs NACOA to select the issues it studies "on a selective basis". This is to emphasize Congress desire for indepth assistance on a few highly important issues, rather than highly general comments on many subjects.

Because we are all on tight schedules this morning, I hope we can go through the prepared statements quickly. That will leave us more time for questions.

[The bill and agency comments follow:]

Staff members assigned to this hearing: Deborah Stirling and Gerald Kovach.

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95TH CONGRESS
1ST SESSION

S. 1347

IN THE SENATE OF THE UNITED STATES

APRIL 21 (legislative day, FEBRUARY 21), 1977

Mr. HOLLINGS (for himself and Mr. MAGNUSON) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation.

A BILL

To create a National Advisory Committee on Oceans and Atmosphere, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Advisory Committee on Oceans and Atmosphere Act of 1977".

SEC. 102. ESTABLISHMENT.

There is hereby established a committee of 15 members to be known as the National Advisory Committee on Oceans and Atmosphere (hereinafter referred to as the "Committee").

SEC. 103. MEMBERSHIP, TERMS, AND DUTIES.

(a) MEMBERSHIP.—The members of the Committee,

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who may not be full-time officers or employees of the United States, shall be appointed by the President. Individuals are eligible for appointment if such individuals are eminently qualified by way of knowledge and expertise in those areas of direct concern to the Committee, including but not limited to—

(1) one or more of the disciplines and fields included in marine science and technology, marine industry, marine-related State and local governmental functions, coastal zone management, or other fields directly appropriate for consideration of matters of ocean policy; and/or

(2) one or more of the disciplines and fields included in atmospheric science, atmospheric-related State and local governmental functions, or other fields directly appropriate for consideration of matters of atmospheric policy.

(b) TERMS.—(1) The term of office of a member of the Committee shall be 3 years; except that, of the original appointees, 5 shall be appointed for a term of 1 year, 5 shall be appointed for a term of 2 years, and 5 shall be appointed for a term of 3 years.

(2) Any individual appointed to fill a vacancy occurring before the expiration of the term for which his or her predecessor was appointed shall be appointed only for the

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remainder of such term. No individual may be reappointed to the Committee for more than one additional 3-year term. A member may serve after the expiration of the term of office for which appointed until his or her successor has taken office, or until 90 days after such date, whichever is earlier. The terms of office for members shall begin on July 1, 1977.

(c) CHAIRMAN.—The President shall designate one of the members of the Committee as the Chairman and one of the members as the Vice Chairman. The Vice Chairman shall act as Chairman in the absence or incapacity of, or in the event of a vacancy in the office of, the Chairman.

(d) DUTIES.—The Committee shall—

(1) undertake a continuing review, on a selective basis, of national ocean policy, coastal zone management, and the status of the marine and atmospheric science and service programs of the United States; and

(2) advise the Secretary of Commerce with respect to the carrying out of the programs administered by the National Oceanic and Atmospheric Administration.

SEC. 104. REPORTS.

(a) IN GENERAL.—The Committee shall submit an annual report to the President and to the Congress setting forth an assessment, on a selective basis, of the status of the Nation's marine and atmospheric activities, and shall submit

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such other reports as may from time to time be requested by the President and the Congress.

(b) REVIEW BY SECRETARY.—Each annual report shall also be submitted to the Secretary of Commerce, who shall, within 60 days after receipt thereof, transmit his or her comments and recommendations to the President and to the Congress.

(c) ANNUAL REPORT SUBMITTAL.—The comprehensive annual report required herein shall be submitted on or before June 30 of each year, beginning with June 30, 1978.

SEC. 105. COMPENSATION AND TRAVEL EXPENSES.

Members of the Committee shall, while serving on business of the Committee, be entitled to receive compensation at rates not to exceed $100 per diem, including travel-time, and while so serving away from their homes or regular places of business, they may be allowed travel expenses, including per diem in lieu of subsistence, in the same manner as the expenses authorized by section 5703 (b) of title 5 for persons in Government service employed intermittently.

SEC. 106. INTERAGENCY COOPERATION AND ASSISTANCE.

(a) LIAISON.—Each department and agency of the Federal Government concerned with marine and atmospheric matters shall designate a senior policy official to participate as observer in the work of the Committee and to offer necessary assistance.

92-494—77——2

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(b) AGENCY ASSISTANCE.—The Committee is authorized to request from any department, agency, or independent instrumentality of the Federal Government any information and assistance it deems necessary to carry out the functions assigned under this Act. Each such department, agency, or instrumentality is authorized to cooperate with the Committee, and, to the extent permitted by law, to furnish such information and assistance to the Committee upon request made by the Chairman, without reimbursement for such services and assistance.

(c) ADMINISTRATIVE ASSISTANCE.—The Secretary of Commerce shall make available to the Committee such staff, information, personnel, and administrative services and assistance as may reasonably be required to carry out the provisions of this Act.

SEC. 107. REPEAL AND TRANSFER.

(a) REPEAL.—The Act of August 16, 1971 (33 U.S.C. 857 et seq.) is hereby repealed.

(b) TRANSFER.—All personnel, positions, records, and unexpended balances of appropriations, allocations, and other funds employed, used, held, available, or to be made available in connection with the functions specified by the Act of August 16, 1971, are hereby transferred to the National Advisory Committee on Oceans and Atmosphere established by this Act. The personnel transferred under this subsection shall

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be so transferred without reduction in classification or compensation except, that after such transfer, such personnel shall be subject to reductions in classification or compensation in the same manner, to the same extent, and according to the same procedure as other employees of the United States classified and compensated according to the General Schedule in title 5, United States Code.

SEC. 108. AUTHORIZATION FOR APPROPRIATIONS.

There are authorized to be appropriated for purposes of carrying out the provisions of this Act not to exceed $445,000 for the fiscal year ending September 30, 1978. Such sums as may be appropriated under this section shall remain available until expended.

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FEDERAL MARITIME COMMISSION,
Washington, D.C., May 18, 1977.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, D.C.

DEAR MR. CHAIRMAN: This is in response to your request for the views of the Federal Maritime Commission with respect to S. 1347, a bill to create a National Advisory Committee on Oceans and Atmosphere, and for other purposes.

The Federal Martime Commission defers to other agencies more directly affected as to the desirability of enacting S. 1347. The bill would appear to have little, if any, impact upon the Federal Martime Commission. The only regulatory activity of this Commission that could be affected by S. 1347, as we understand the bill, is the Commission's certification of financial responsibility, pursuant to the Federal Water Pollution Control Act, for removal of oil and hazardous substances spilled by vessels using United States navigable waters. Our regulations implementing this authority are contained in 46 C.F.R. 542.

The Commission's authority in this area is limited to ensuring that financial responsibility is established by owners or operators of vessels of over 300 tons prior to those vessels entering or using U.S. waters so as to cover the costs to the Federal Government of removal of any discharge of oil or hazardous substances by such vessels. This regulatory responsibility may be sufficiently affected by the activities of the National Advisory Committee on Oceans and Atmosphere to warrant the designation of a representative of the Commission as observer pursuant to Sec. 106 of the bill. However, we see no other possibility of impact upon this Commission should S. 1347 be enacted.

Sincerely yours,

CLARENCE MORSE, *Vice Chairman.*

Senator HOLLINGS. Our first witness this morning is our distinguished friend, Mr. Howard Pollock, Deputy Administrator of National Oceanic and Atmospheric Administration.

We welcome you to the committee and will be glad to hear from you at this time.

STATEMENT OF HOWARD W. POLLOCK, DEPUTY ADMINISTRATOR, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

Mr. POLLOCK. Thank you very much, Mr. Chairman.

Mr. Chairman and members of the committee, it is a pleasure for me to appear before you today to participate in these hearings on S. 1347, the National Advisory Committee on Oceans and Atmosphere Act of 1977. My remarks will be brief and are intended to establish a framework within which the committee will hear from Dr. William J. Hargis, Jr., chairman of NACOA.

Public Law 92–125, which established NACOA, requires that the Secretary of Commerce provide administrative and supporting services to the committee. That responsibility has been delegated by the Secretary to the Administrator of the National Oceanic and Atmospheric Administration.

Public Law 92–125 also requires that NACOA review the marine and atmospheric science and service programs of the United States, and charges the committee with advising the Secretary of Commerce with respect to carrying out the purposes of the National Oceanic and Atmospheric Administration.

As you are keenly aware, Mr. Chairman, NACOA reports to both the President and Congress, and this is, I think, a unique situation, to keep both the legislative and executive branches informed.

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I am sure that you are familiar with the impressive accomplishments of NACOA since its establishment in October of 1971.

I will not go into the details of those accomplishments beyond stating that under the leadership of the present chairman, Dr. William J. Hargis, Jr., and of its first chairman, Dr. William A. Nierenberg, NACOA has established itself as an independent assessor of the Nation's marine and atmospheric programs. The Secretary of Commerce and the National Oceanic and Atmospheric Administration (NOAA) are indebted to NACOA for its interest and insight into a number of marine and atmospheric programs in which NOAA has primary interest.

The legislation which this committee is considering today proposes to reduce the size of NACOA from the current 25 members to 15 members. Some decrease in the number of committee members would probably not adversely affect the work of the committee. However, it is useful to maintain a balanced representation over many fields and geographical areas.

Further, I have some concern over the disruption in the work of the committee which would occur during the period between repeal of the current authorization, as called for in S. 1347, and the nomination, selection, and swearing in of the new members which would then be required.

During oversight hearings before the Subcommittee on Oceanography of the House Merchant Marine and Fisheries Committee on February 24, 1977, concerning the fiscal year 1978 authorization for NACOA, the Administrator of NOAA spoke highly of the committee's work and urged that its authorization be extended. I want to concur in those remarks, Mr. Chairman. As you are very well aware, the President's budget request for fiscal year 1978 contains $445,000 for NACOA.

I would like to conclude my remarks by stating that we at NOAA have been privileged to work with NACOA since its inception in 1971 and look forward to its counsel in the future.

Again, Mr. Chairman, I wish to express my appreciation at being afforded the opportunity to appear before this committee today.

Senator HOLLINGS. Thank you very much, Mr. Pollock.

What disruption? Can you elaborate? If you have a period between the repeal and the appointment of the new members, you say you are concerned that some of the programs or work will be disrupted?

Mr. POLLOCK. Yes. I think the point I am trying to make, Mr. Chairman, is that at the effective date of the passage of this amendment to the act, the existing committee would no longer be in existence. It could take some time from the time of selecting nominees, getting their backgrounds checked, getting them approved, and sending them forward for the President to make the appointments may take many months.

My concern is simply that there may be a lapse of time, with a lot of responsibility on the part of the new committee, when no action would be taking place on the part of the committee.

Senator HOLLINGS. The present law reads that they would stay in office until their successors are appointed?

Mr. POLLOCK. Yes.

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Senator HOLLINGS. Do you know of any particular programs that would suffer? What are the programs ongoing now with the committee?

Mr. POLLOCK. Well, I think the work that they have been doing in all of the areas concerning both the oceans and atmosphere could suffer. I think what I am saying is that there would be a void and there would be nothing taking place until such time as the new people were sworn in, a new chairman elected, and they'd begun to do their work.

We think they have been operating very effectively.

Senator HOLLINGS. We can ask a little bit more in depth about that.

Mr. POLLOCK. Yes, sir.

Senator HOLLINGS. You are asking for the same amount, $445,000?

Mr. POLLOCK. Yes, sir.

Senator HOLLINGS. Very good, sir.

We appreciate your appearance here this morning. Thank you, sir.

Mr. POLLOCK. Very nice to be here, Mr. Chairman.

Senator HOLLINGS. As I understand, the next witnesses will appear as a panel: Dr. Hargis, chairman of NACOA, along with Dr. McKernan and Dr. Landsberg.

STATEMENTS OF DR. WILLIAM J. HARGIS, JR., CHAIRMAN, NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE; ACCOMPANIED BY DR. DONALD L. McKERNAN, VICE CHAIRMAN; DR. HELMUT LANDSBERG, MEMBER; AND DR. DOUGLAS BROOKS, EXECUTIVE DIRECTOR

Dr. HARGIS. Good morning, Mr. Chairman.

Senator HOLLINGS. You all come on up here and have a seat and tell us what is going on.

Dr. HARGIS. Mr. Chairman, if you will allow me to, what I would like to do is to make an opening statement, ask Dr. McKernan and Dr. Landsberg respectively to address marine and atmospheric activities and then make a closing statement. Also, with your permission I would like to have Dr. Brooks here with me to supply detail in case we don't have it for you.

Senator HOLLINGS. All right, go right ahead.

Dr. HARGIS. Mr. Chairman, members of the committee, I am pleased to appear before you again this year on behalf of NACOA. I am now in my 3rd year as chairman of NACOA. During these past 2½ years and the 3 years prior, when I served as vice chairman, I have seen NACOA evolve from an idea into a hardworking, productive committee.

I would like to digress for a moment and ask the Chair if it would be possible to have a copy of my recently prepared annual report to the Office of Management and Budget, which was forwarded to the Secretary of Commerce relative to work for calendar year 1976, submitted for the record.[1]

Senator HOLLINGS. It will be included.

Dr. HARGIS. Thank you, sir.

We have some copies for the staff.

[1] See p. 32.

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Six years ago, the Congress established NACOA to assist the Federal Government in meeting a need that had become apparent to most of us working in marine and atmospheric affairs but not yet to the general public. Today, that need is even greater and we are seeing an increased public awareness of that need.

The Congress saw in 1970 that our economic and industrial growth was bringing us to what many regard as our last Earthbound frontier—our oceans—and that this growth was also raising questions about the use of our atmosphere. Because the oceans and the atmosphere are so interdependent in the creation of weather patterns and in determining ocean circulation, it is often difficult to address one without considering the other. This committee does concern itself with both. In particular, it tries to bring expertise and experience from non-Federal sources to bear on issues of importance to both the legislative and executive branches.

In our testimony today, my colleagues and I will try to convey to you briefly how we have gone about fulfilling this task and why we have done it the way we have. On this basis I will then discuss specific suggestions for modifying S. 1347 to provide the means that our experience has shown are needed if the committee is to be effective, recognizing at the same time its objectives, which we share, of strengthening the committee membership and keeping costs to a minimum. With me today is professor Donald L. McKernan, who is vice chairman of NACOA. As you know, after long and distinguished service in Government, he is now director of the Institute for Marine Studies at the University of Washington and professor of marine studies in the university's College of Fisheries.

Also with me is Dr. Helmut E. Landsberg. Dr. Landsberg too has distinguished himself in Government as a past director of climatology for the U.S. Weather Bureau and the first director of the environmental data service of NOAA. Since 1967 he has been professor of meteorology, just recently retired, at the University of Maryland.

Both of these men have made invaluable contributions to their fields of work and to the work of NACOA. Dr. McKernan will provide some insights and detail of NACOA's role in marine matters. Dr. Landsberg will do the same for atmospheric matters.

I would suggest that we hear first from Dr. McKernan then Dr. Landsberg, and then I will summarize and comment on the pending legislation.

Senator HOLLINGS. Very good.

Dr. MCKERNAN. Mr. Chairman, in order to help save some time, I would appreciate my written testimony being inserted in the record and I will make a few comments at this time.

Senator HOLLINGS. It will be included in its entirety.

You can highlight it as you wish.

Dr. MCKERNAN. Mr. Chairman, as vice chairman of NACOA for about the last 2 years, I have seen this organization approach and study various issues dealing with both oceans and atmosphere. I have been impressed by the breadth of the knowledge of the members of NACOA, and I am of the view that in the future both the Congress and executive department will need and will get very valuable advice from an independent advisory committee such as NACOA.

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I am reminded, Mr. Chairman, of Public Law 94-265, which is now law, the Fishery Conservation and Management Act, and the enormous responsibility that this act gives to regional councils and to the Federal Government, combining, if you will, Mr. Chairman, the local interested public, the States as well as the Federal Government in the conservation and management of our fishery resources.

This legislation, of course, is just slightly over a year old now; it's in effect, it's working, and foreign fishermen as well as American fishermen are rapidly coming under control for the first time in the history of the republic, Mr. Chairman.

I myself am very much impressed with what's happened. NACOA is controlling the course of this action and will in fact make some preliminary comments and draw some conclusions for Congress and the executive department.

I am also aware of the very important oil pollution legislation that is being dealt with by this committee, Mr. Chairman, and the tremendous effect that such legislation will have on protecting further the coastal environment of our country. Here again, NACOA is looking at this question, and I think will make a valuable contribution to the Congress and to the executive department.

I know that merchant marine legislation, that is, legislation dealing with the questions and problems of our merchant marine, is uppermost in the minds of this important committee. Here again, NACOA is addressing itself to that problem and hopes to make a contribution from the experience and background of its members.

In addition, of course energy questions, energy from the sea, the general question of the environmental concerns, effects of the ocean, effects of pollution and man's activities in the ocean—all of these are going to impact on the future development and use of the resources of the ocean, and it's my judgment that both Congress and the executive department will be very well served to continue the activities of this committee, in some form or another, Mr. Chairman.

Thank you. I am available for any questions.

[The statement follows:]

STATEMENT OF DR. DONALD L. MCKERNAN, NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE

Mr. Chairman, members of the committee, I am Donald L. McKernan. I am the Director of the Institute for Marine Studies at the University of Washington in Seattle, and I am Vice Chairman of NACOA. I would like to expand a little on what Dr. Hargis has already said about the work of NACOA. By profession, I have always worked in marine affairs, particularly fisheries. I have been fortunate in that I've seen marine affairs, and the work of NACOA, from a variety of vantage points.

Much of my early career was devoted to fisheries research and management. I have worked with State fisheries management agencies, and in the early 1950's, I was on special assignment with the Secretary of War to stimulate the development of fisheries in post-war Japan. In the latter part of the 1950's, I had responsibility for research and management of all Alaskan commercial fisheries and later became the first director of the Interior Department's Bureau of Commercial Fisheries. After that, from 1966 to 1974, I was Special Assistant to the Secretary of State for Fisheries and Wildlife. And now I am in the academic world.

What I'm saying is that I have struggled with marine issues on the State and local level, on the Federal level, at the international level, and have worked in both the commercial and academic communities. It is this opportunity to view

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marine issues from different angles that has given me a special appreciation for what NACOA has done during its short 5½-year lifetime and why I believe NACOA in some effective form should continue.

Because of my work with the Japanese fisheries, I know from personal experience how important it is to protect and develop the oceans as a source of food. I also know the role played by national as well as by international law to protect the vitality of the fishing industry as well as the resource itself. Nations compete for resources, not always entirely for economic advantage. And the U.S., like it or not, is a competitor too and must protect the interests of its citizens.

NACOA has consistently warned of the difficulties that we must expect to encounter in our international negotiations on marine law.

From its beginning, NACOA was a persistent—and, I believe constructive—critic of the State Department's all-or-nothing approach to negotiating a multilaterial law of the sea. NACOA warned that the United States could not wait another decade for universal agreement while fish resources off our coasts were being threatened and the U.S. fishing industry weakened. NACOA urged patience with the United Nations Law of the Sea Conference, but not beyond the 1975 session. NACOA urged that if this conference did not by then produce a treaty, then the United States should take unilateral action to put these resources under direct management.

This action was to have two major elements: first, a comprehensive plan for the more effective management of U.S. marine fisheries, and second, unilateral action by the United States to extend jurisdiction over fisheries resources to 200 miles from its shore. It was important for the United States to recognize the stake other nations have in these fisheries. But the United States had to protect its own long-term interests and the Congress did just that when it passed the Studds-Magnuson Bill, Public Law 94–265.

I am convinced that when viewed in retrospect, this was the right way to go, and I am gratified that NACOA played an important role in advocating that position.

At the same time, and as part of the same overall strategy, NACOA pressed the Department of Commerce and especially the National Oceanic and Atmospheric Administration (NOAA) to develop a national firsheries plan. NOAA established a special task force and has evolved a first approximation of such a plan, which NACOA believes takes a solid approach to the problem. NACOA will continue to follow the evolution of the plan and its implementation on the State and regional level. NACOA will, of course, also follow the international moves and counter moves in response to our 200-mile economic resource zone, as well as other elements of what will be an evolving international law of the sea.

The elements are all interrelated, complex, important to our national interests. The elements must all be considered together, for very little occurs in one area of concern that does not influence other sectors. This is why NACOA must have such a wide range of expertise represented among its members.

Some of us on NACOA were hard critics of many aspects of the National Sea Grant Program as it approached the end of its first decade. I was a part of the searching and lengthy examination given to the program by a subpanel of NACOA. In my opinion, this examination and our testimony to the Congress have led to a number of significant improvements in the program.

Then there was the International Decade of Ocean Exploration, or the IDOE for short. The U.S. portion of the IDOE is managed by the National Science Foundation, as you know. About 2 years ago, the Director of the National Science Foundation asked NACOA to review the IDOE program. I believe NACOA did an excellent, independent review and in particular helped NSF get started on planning what should happen when the IDOE ends in 1980 even though not all our recommendations have been adopted. Here as elsewhere NACOA has tried to look at both the past and the future at the same time. It sees itself as an evaluator of the past for the purpose of generating advice about the future.

The Glomar Explorer is another example. NACOA saw the Glomar Explorer as an example of advanced technology only somewhat ahead of its time about to be turned into scrap. NACOA, after careful deliberation and discussion, lent its support and urging to preserve the ship. Storing the ship is a calculated gamble that one day, and soon, having it intact will be well worth the storage costs.

There is a point to be made here. The point is that NACOA is a working committee. It concerns itself with real-world issues identified by its members on the

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basis of their expertise. These issues affect the national interest and the lives of our citizens. NACOA members have talents of unique diversity. With spirit and commitment they work hard on real problems when the committee feels it can make a difference. The committee members take time from their busy professional and business lives to spend days in work sessions, site visits, briefings, deliberations, preparing reports and testimony, searching out the issues that must be called to national attention, and struggling with them now so they won't overwhelm us in the future.

I would like to speak for just a moment about the future. In the forthcoming annual report of NACOA—its sixth—NACOA intends to address the U.S. future in marine matters in a framework which I believe can be useful at the national policy level for a long time to come. NACOA is consciously working within the concept of seapower—not in the old military sense—but in the new, forceful, wide ranging sense which takes into account what we have learned about the oceans over the past 2 decades and what we have learned about our national dependence on the oceans both today and in the decades to come. It is an approach which is in consonance with your definition, Senator Hollings, of seapower as constituting the totality of U.S. involvement in the oceans.

The concept has many elements and NACOA is working to highlight those of special importance and in need of emphasis now while setting the stage for follow-on work in subsequent years. What is involved is access to vital resources and market overseas—including Middle Eastern oil. shipping, an industrial base for developing the resources of the sea and the seabed, a Navy to protect the sealanes, a Coast Guard to assure the safety of shipping and seagoing operations and to enforce the regulations which protect our environment, our ports, and our crews and passengers, a workable and realistic law of the sea, an energetic and alert research and engineering community to supply the new technology when we need it, a healthy marine industry to attract the capital when we need it, and an informed public helping to make informed decisions and giving informed support to our national marine programs and objectives. Again, as in the past, though the framework is broad, we plan that the recommendations will be specific.

The recently passed Fishery, Conservation and Management Act of 1976 (Public Law 94–264) and its implementation are being monitored by NACOA and I might add our first view of this is a favorable one.

In closing, I must tell you that along with my optimism for the future of our capability for effective use of the sea and its resources, I have an underlying uneasiness. Now that the outmoded, traditional concept of "freedom of the seas," a concept deeply imbedded in our historical consciousness, is of necessity being replaced by new modes of competition and interaction with other seagoing nations, our interests are being severely challenged. That challenge will become more direct as the world's land-based resources become more scarce. Food, oil and gas minerals, the geography of politics and defense—there are among the most basic elements of a vigorous national life. And nations will be turning more and more to the oceans for them. We must be ready.

I believe that the concept of seapower which NACOA is beginning explicity to address though of necessity in a selective fashion will be prime to the oceanic future of the United States. NACOA has, I believe, served an important role in assisting Congress in its oversight function and the Executive Branch in program implementations these past 5½ years. I urge that you give this unique and pivotal committee, in its present or some suitably modified form, the support and encouragement it needs to continue its job.

Senator HOLLINGS. All right, sir. Dr. Landsberg.

Dr. LANDSBERG. Thank you, Mr. Chairman.

Mr. Chairman, I have a prepared statement which I would like to submit for the record and will summarize in a few minutes.

The efforts of NACOA in the atmospheric fields have been quite diversified. The most important ones have been surveillance of the Government's activities in the field of weather modification. As you know, this has resulted then in an act of Congress to establish a plan for weather modification which I think is rather important.

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Another point, which the committee had devoted a lot of attention to is the variations of climate. I think we are all aware of the importance of that particular subject. And I might say that without understanding the oceans, we will not be able to understand the variations in climate and as you know there is legislation pending in this particular field for which NACOA has given testimony, and I personally, too, have done so in my private capacity.

We have looked at the very important question of air pollution monitoring, which requires considerable oversight. And we have in recent years concerned ourselves with the problem of storm warnings and appropriate warnings to the public, and this will also be in our next report.

Then one of the other atmospheric topics that has been of interest to us is the question of storm reconnaissance and ozone in the stratosphere. Then we have of course worried about the flood warnings and similar conditions that are at issue.

In all questions of atmosphere, again, energy plays a great role because in part solar radiation may help us in conserving energy.

I might say that perhaps if you look through the reports you will find that there is considerable continuity. From year to year we have followed up on various things and formulated our recommendations on the basis of what has been done in the Government agencies.

There is a large number of Government agencies concerned with atmospheric affairs and the effect of NACOA has been very healthy in coordinating some of those activities.

You asked about this question of continuity, and there are items which are pending now which we will not be able to finish for our sixth annual report and which have to be taken up again in the future as the committee continues.

Thank you, Mr. Chairman.

[The statement follows:]

STATEMENT OF DR. HELMUT E. LANDSBERG, NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE

Mr. Chairman, Members of the Committee: I am Helmut Landsberg, Professor Emeritus at the University of Maryland, and I will say a few words concerning some of NACOA's efforts on the atmospheric side.

In its first annual report, NACOA drew attention to the state of affairs in the field of weather modification—an activity with great potential benefits and also grave potential risks, and one in which insufficient attention was being paid to establishing a solid underpinning for operational programs and for assessment of economic and geophysical impacts. In large part, NACOA felt, this situation was not improving because the federal effort was distributed among a number of departments and agencies with no one organization having clear authority to survey the field, support the necessary studies, and recommend legislation and regulation where needed. NACOA has repeated its recommendations on this subject in all five of its annual reports. We are pleased to note that during the past year legislation was enacted directing the Secretary of Commerce to conduct a 1-year study to serve as a basis for a national policy on weather modification and a coherent program of Federally supported weather modification research and development.

In NACOA's second year, the Committee turned its attention to the effectiveness with which the public is warned of impending weather disasters. That year's report discussed the importance of small-scale weather phenomena, the neecssary mix or automation and professionalism, and the overwhelming importance of the warning delivery system and the way in which local agencies

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and the general public respond. Also during that year, the Committee prepared a special report for the Administrator of NOAA addressing specifically the effectiveness of the flood warnings issued during Hurricane Agnes, and concluding that the warning delivery system was the primary area in need of greater effort.

In its third year, NACOA turned to a far broader subject—the complex interactions between the atmosphere and the oceans which, on a longer time scale than that of daily weather, determine our overall climate, and the fluctuations in climate which on the one hand have major impact on global food production and energy demand, and on the other hand are themselves impacted by human activities, especially by the rapid growth of energy consumption and the attendant dissipation of waste heat. The Committee felt that far more effort was needed, especially in the area of short term (seasonal and yearly) variations. NACOA returned to this topic in its fourth and fifth annual reports, and we note that although legislation to accomplish what is needed is pending before the Congress, the situation has not changed significantly since we first called attention to it nearly 3 years ago. Perhaps the hardships of the present winter season will sensitize our Nation to the very real impacts of climate fluctuations, and result in establishment of what NACOA has been calling for—a program directed toward a greater understanding of climate, an ability to predict climate, and development of mechanisms for incorporating climatic information into our political and economic decision-making so that we are better able to cope with climate changes when we are forewarned.

In its fifth year, NACOA addressed the impact of weather on aviation safety, and recommended changes in the programs of NOAA and the FAA—the two agencies sharing responsibility. In that same year, the Committee looked into the adequacy of EPA's long term environmental research program, and made appropriate recommendations.

NACOA has also touched on topics such as aerial storm reconnaissance and ozone in the stratosphere. At present, the Committee is looking into air pollution monitoring, and the adequacy of public warnings of short-lived weather disasters such as flash floods.

Mr. Chairman, in this brief overview I have not touched in detail on the nature of each of these topics, or on the recommendations which NACOA has offered. But one feature that characterizes every one of these topics is that, as on the marine side, a number of different Federal agencies are involved. Although NOAA would appear to be the agency having primary responsibility for atmospheric programs, it turns out that a host of others—the Departments of Agriculture, Defense, Interior, and Transportation; and EPA, ERDA, FCC, NASA and NSF are all involved. This is as it should be; each of these agencies comes into the picture when and as its mission is affected. But this imposes demands for interagency coordination and, we believe, for designation of specific agencies to take the lead in certain programs, if responsibility is not to be so diffused as to disappear in bureaucratic maze. Too often, the atmosphere has been simply taken for granted. Recent concerns about pollution, drought, severe winters, and energy demand may have awakened us to the fact that there is much we need to do. Fortunately a good foundation exists in the form of studies and recommendations by various bodies. NACOA has, in its reports, drawn attention to these, and we will continue to do so, adding our own assessments and recommendations as we have done in the past.

Senator HOLLINGS. Thank you, sir.

All right, Dr. Hargis.

Dr. HARGIS. The present committee, with its 25 members, has met almost every month in full session over the 5½ years of its lifetime. These meetings last the better part of 2 days each. Attendance has been high, averaging about 18 members at each meeting, approximately 75 or so percent.

In addition, the members meet in small specialized panels and working groups. This combination of small, specialized meetings and full committee meetings is necessary in order to perform detailed studies focused on specific issues without losing broad perspective. It is this broad perspective which gives the findings and recommendations of NACOA their value and importance.

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A vital characteristic of the committee is the variety, as well as the quality of experience and expertise of its membership. It is this characteristic which has enabled the committee to select important issues and deal with them in a focused, impartial, intelligent, balanced manner.

It is a working committee. Its members search out and decide on the issues which should be addressed. The members help staff assemble the necessary information, listen to outside experts as necessary, make site visits where necessary. They develop proposed positions on the issues under study and work among themselves to reach consensus. They help write sections for the annual report and the special reports which are issued from time to time, no item in the report goes out without the approval of the committee. And to the extent they can, the members personally help communicate significant findings and recommendations to the Federal agencies involved and to the Congress informally as well as by formal reports and testimony, letters and memoranda.

NACOA keeps in touch with the Congress, with the executive branch, with agency and program management to be sure that the topics it selects for attention are, in fact, relevant to Federal concerns. It works through agency observers who attend committee meetings so that the committee has access to the working levels of the agencies, as well as to policy level management.

We also work with the staffs of the appropriate Senate and House committees.

We view our line of communication with the Congress as highly important, though posing special problems because of your heavy workload and busy schedules. One member of the NACOA staff devotes virtually full time to keeping this line of communication open and current, and I would like to have another one.

In addition, the committee tries to hold at least two of its meetings each year on Capitol Hill, one on the House side and one on the Senate side. This provides one mechanism for hearing directly from Members of Congress. Our working mode is to listen as well as speak.

And yet we find ourselves generally up against the stops, always short of time, short of information, short of staff, always running hard to get the work out, meetings set up, visits made, conferences attended. Of course, in this respect the Senate and its staff people are not a great deal different.

The members of NACOA are people who live busy lives in industry, in the academic world, and in non-Federal public service. I am sometimes asked why they are willing to make such a heavy commitment of time and energy to the work of NACOA. The answer is that they see their work as an opportunity to make an important contribution to the Nation and their fellow citizens.

I might add in the 5½ years I have been associated with the committee, the full time of its existence, allowing for the fact that we have not yet had an opportunity to work with the new members, we have only had two duds. I won't name who they are, but that is a pretty good record out of about 60 or 70 people.

I am anxious to see that this energy and spirit within NACOA continues to flourish. That is an obligation I feel very keenly. I feel that the interest and support shown by the Congress is viewed by the mem-

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bers as an important index of the value of NACOA's work and an indispensible stimulant to the continued commitment of its distinguished and talented members.

I spoke earlier of the unique combination of talents represented on the committee and of the importance of this broad scope of relevant experience to the work of NACOA. This is recognized in S. 1347 in section 103(a) which makes the qualifications for membership explicit, and is an excellent feature of the bill.

I think it may be possible to continue with fewer members on NACOA, say around 20 to 21 members. This would accentuate the need to be very diligent in recruiting committee members with the kind of knowledge and experience in the various fields that we need. But of one thing I am certain, we cannot maintain the breadth and scope of our work nor even the present level of activity, funding aside, with only 15 members as the bill provides. I would not personally like to see the level reduced to less than 21, three sevens.

It will also take time for the White House to appoint a new slate of properly qualified members. I would not like to see so little time with a lapse between one piece of legislation and the next piece of legislation, so that in effect the committee will lapse and lose continuity, momentum, and possible staff, before the new NACOA rises from the ashes of the old, or alternatively the new membership appointed in such haste that the result will be a weakened rather than a strengthened committee, or both. I am sure all of us would like to see a careful and deliberate choice of new members. July 1, 1977, seems to me to be too soon to allow his deliberate and careful selection to happen.

S. 1347 authorizes $445,000 for NACOA in fiscal year 1978, the level at which we have been funded in fiscal years 1976 and 1977. This like the proposed reduction in the size of the committee seems aimed at economy. We share this objective, and agree that NACOA, like every other federally supported program, should be scrutinized with cost considerations clearly in mind. But, the proposed level would drastically curtail our efforts and raise serious questions about how worthwhile the whole exercise really is.

Let me show you why. Very briefly, taking as the starting point the same staff level we have had for the past several years and the same level of activity in publications, consultants, stenographic assistance and the like, our projected budget requirements, before any funding of committee member activity at all is considered, runs to about $410,000. This is growth from previous years due to the across the board and other automatic staff pay raises, merit raises, inflation, and other costs outside our control.

That leaves some $34,000 to support the committee members themselves. The cost of a committee meeting depends on the number of attendees, and the location at which the committee is held in relation to where the committee members must come from. With the average of 18 given by our history, a 2-day meeting in Washington is projected to run in fiscal year 1978 about $12,000. We would be hard put to squeeze in even three meetings at the budget level in the bill. If the attendance were higher, say 21, the meeting cost would run about $14,000. If the attendance were down to 15, the figure becomes $10,000.

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To go at it the other way, the overall budget level required to support the level of activity, the committee has carried on in the past is about $580,000 for an average of 21 attendees, $556,000 for 18, and $540,000 for 15.

I have assumed in these calculations, that two meetings would be held outside Washington per year, and that six working groups of five members each would meet for 1 day in Washington and a geographical distribution of members similar to the present.

I must say if we have any more Alaskans appointed we are going to be in deep trouble.

At this point I would also have to say that I consider the present staff stretched much too thin. We need a minimum of two additional professional analysts which, if approved, would add another $80,000 to the budget.

To bring this testimony to a close, let me bring in another perspective within which these budget levels and variations should also be considered. NACOA is—in essence—attempting to assist the Congress in its oversight function and the executive branch in its management of Federal programs that aggregate well over $2 billion a year. These Federal programs, in turn, have an important degree of leverage over private sector activities that contribute something approaching $10 billion a year directly to the GNP, and projected to increase greatly in the future, according to studies sponsored by NOPS.

The important policy question then really is what level of support is worth investing in NACOA's assistance in the areas where major economies can be realized; that is, increasing efficiency as well as effectiveness of the large family of Federal programs in marine and atmospheric affairs. Although this kind of return on an investment in NACOA is difficult to quantify, my feeling is that with clear evidence of congressional interest and encouragement, with the right kind of membership, and with an adequate level of budgetary support the probability of a productive and useful committee is high.

Mr. Chairman, this concludes my prepared testimony.

I will be happy to try to answer any questions that you may have.

Senator HOLLINGS. All right. Right to the point. It's obvious from having discussed it with my colleagues on the House side and the Senate side, with members of NACOA, and with the leadership in NOAA and otherwise generally around that, on balance, there is no question that NACOA is doing a good job. NACOA has been a tremendous help; we would have never gotten the Fishery Management bill and several other things had not NACOA been working and working hard, and I wouldn't detract in any way, Dr. Hargis, from what you and Dr. Nierenberg and the rest of the members have been doing.

But to the point. You talked about two duds in past years. Yet it seems to Members of the Congress, that of the last nine appointees we only got two good ones, and we got about seven duds. It looked like a political outloading just to fill some appointments. And that's why we get into the proposition of ending one Advisory Committee and commencing anew another one. I have done this, not on the basis of some biases. I have talked to our friends on the Republican side of the aisle. So since we are heading in that direction, we might as well put it on the top of the table.

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That is the impetus behind this particular measure that has been submitted to abolish one NACOA and create another.

Now, you don't want to lose momentum, as you indicate. But what are the special projects NACOA has on? I mean, Dr. Landsberg talked, Dr. Brooks tells me, that you have got A, B, C, and D, and all this work may go down the drain, that it cannot be interrupted.

Can you give me an example?

Dr. HARGIS. Mr. Chairman, I think, as you're aware, the normal replacement date for those members that are currently serving out the last 3 years is October 1 and——

Senator HOLLINGS. You're talking about the normal replacement?

Dr. HARGIS. Yes, sir.

Senator HOLLINGS. I am talking about the program and the effect of a total repeal and coming in anew. What programs do we have?

Dr. HARGIS. That is what I am going to get at. And I am concerned that with the current arrangement, and I might misunderstand it, for S. 1347, there could be a gap between the time of repeal of the current authorization and complete passage, that is, and the time that the new committee could be brought on board. I would not like to see that happen.

Now, at the present time we are——

Senator HOLLINGS. Yet you have testified July 1, 1977, seems to be too soon.

Dr. HARGIS. That's what I am trying to indicate. In other words, I think that if the——

Senator HOLLINGS. Do I understand you clearly? One minute you say it's too late, too big a gap. In another part of the testimony you're saying it's too soon?

Dr. HARGIS. No, sir. I am concerned that if we—if the bill comes on in a time span that is now included in the bill that there will be a gap and I would suggest that the new committee be established as of October 1, if that would make sense.

Senator HOLLINGS. Let's assume we do that. What happens?

Dr. HARGIS. If a gap should develop, and I'm merely taking a worse case analysis, I think, we have underway now several major studies. One is in the marine transportation business and we will not have this done by the time our sixth annual report is completed at the end of June. We are—we will carry forward our marine education study, and we will—we are also carrying forward with our time and whether prediction studies. These are the major areas of concern. We are looking into sources of energy, again from the sea, with specific interest in Outer Continental Shelf developments, pollution from oil. We are interested and looking forward to making a statement on mining which may not be ready by the annual report.

And then we have the continued concern with aviation weather safety, climate prediction, and climate energy, and food.

If there is no gap, if there is a reasonable carryover of committee members, then my worst case may not appear.

Senator HOLLINGS. Of course, your annual report is due on June 30. If you waited until October 1, a third of the committee would be lame duck between the end of the report and October 1.

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Well, I just wanted to get it fixed in my mind that something traumatic wasn't going to happen.

On another point. You see my flavor, Dr. Hargis, when we ask for a little bit more congealing and pinpointing and emphasizing of, say, four or five points rather than these general recommendations in your reports. We in the Congress need specific advice on specific issues. Let me say this, too, with respect to the oceans vis-a-vis the weather.

No one's got a need for—I don't even need—an advisory committee for the weather. That crowd does extremely well. And it's been doing well. But it's also just like a law firm with a bunch of lawyers who are interested in searching titles and organizing land development and limited partnerships and tax measures that go with it and the profits and everything else, and you can't get them in the courtroom to try cases. I can't get the NOAA crowd off the weather for a minute and get them into the oceans. That's been Congress' misgiving.

Dr. McKernan, you know this. For instance, where are the best marine scientists and expert oceanographers but in the Navy or National Academy of Science? Go down to NOAA and find them? Where is the research and development of these kind of programs?

Dr. McKernan. Well, Mr. Chairman, I share with you the concern for ocean science in Government, and particularly in NOAA. I would like to see efforts within NOAA expanded in ocean research and ocean science. I think it's true to say that NOAA, its National Marine Fisheries Service, has some good ocean scientists, particularly those specializing in fisheries. We have seen evidence of that in the way that we have been able to implement the Fisheries Conservation and Management Act that this committee led through the Congress.

But I do see a very close relationship between ocean science and atmospheric science. The air-sea interaction and the formation of weather itself, the relationship between weather and the oceans is so close that I, myself, would like to see a continuation of this close relationship in our advisory committee as well as in Government.

I would like to add just one thing to the question that you were referring to just a few minutes ago, Mr. Chairman, if I may. One of my concerns about the new legislation in relation to the current bill would be if the urrent legislation were to lapse at the end of June this year, and the bill that has been introduced were not to come into effect until, say, September or October, my concern would be for the staff. We have assembled a really very competent staff that one can't pull together easily, that is you can't turn it off and turn it on. And I would be very much concerned about that, if provision for staff continuity is not taken care of in the current legislation. This would not occur, of course, if the legislation were to pass Congress and be signed before July 1, but if it were——

Senator Hollings. Well, the present authorization goes through September. I think you have got a valid concern. The present authorization goes through September.

Dr. McKernan. Yes; but if the legislation were not through——

Senator Hollings. We have every reason to believe that, in cooperation with the White House, we can get those appointments through by July and acted upon. So there would be continuity.

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Now let's turn to one of the subjects where the Congress could use some advise from NACOA. On fisheries, Dr. McKernan, you say you have got the finest advisory group on fisheries. What recommendation has your group made with respect to the tuna fishing issue? There is a real ongoing problem here, a problem in fisheries management. It's a substantial part of our economy. The Marine Mammal Protection Act has come in, and some say it's too harsh, it's unrealistic, that you have sea otters eating up more of the tuna than man himself can possibly consume, so it's really not doing the job.

And they add if you think it's going to do the job, we are going off to Mexico and do the canning and fishing there, and then what was intended to protect porpoises by directing American fishermen goes straight out the window.

What is NACOA recommending on the tuna fish problem?

Dr. McKernan. NACOA is addressing that problem and will make some comments on it. Of course, the committee itself has not reviewed the preliminary report at the present time, but my own point of view, Mr. Chairman, is that the Marine Mammals Act needs amending, and there needs to be some adjustment to insure that porpoises, small cetaceans, are protected.

But at the same time this protection must, should be of a nature and of a kind to permit the continuation of tuna fishing. I think this can be done, I think the bill in its present form requiring that essentially the kill of porpoise be reduced to zero is unrealistic and unnecessary.

I personally believe that porpoises need to be conserved. I don't think there is anybody in this country that doesn't believe in that. But that doesn't mean that the kill of porpoise needs to be reduced to zero. It can be reduced to a relatively low level and perhaps in the future with adequate application of engineering and science, one can avoid taking any porpoises.

But in the meantime, it seems to me that the porpoise kill can be reduced to a manageable level, and at the same time we can foster this extremely important and economic fishery, the tuna fishery is one of the most economically important fisheries in the United States.

Senator Hollings. Could you give the committee your recommendations even if you couldn't run it through to get NACOA's approval or disapproval. If it had NACOA's approval or disapproval that of course would be even more valuable, but I would consider it valuable if you would just act like king for a day and give us what you recommend, because we're not going to have until July or September or October. I am thinking about the next 2 weeks.

We are going to have to move in this regard. We have millions of dollars tied up, and the tuna fishermen haven't made anything since the 1st of January. They can't eat. They can go out and fish and violate the law or on the other hand go to Mexico. We run them away either way. I want a reasonable solution for a group that's been preserving porpoise, namely the U.S. tuna fisheries.

We think we are controlling them, but we are cutting off our nose to spite our face under the present approach.

Dr. McKernan. I agree with you, Mr. Chairman, completely.

Senator Hollings. Let's have your recommendations up here. That would be a big help to Congress because we have just been looking at it. I find them a pretty responsible group, and not because they are

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on the east coast or incidental to my political area, because they're not, but just because somehow or other we just went a little too far there to tie them up. Now we are providing for extra monitors. I am on the Appropriations Committee and we are considering that now. And the fishermen don't mind that. But it's the basic requirement that is just too prohibitive.

Dr. McKernan. Yes.

Senator Hollings. Now, let's just look at one more thing. With respect again to recommendations, we do get some suggestions from members of NACOA, such as beefing up the sea grant program and reorganizing the oceans program. And we want your ideas on reorganization. You see, the Congress keeps coming back to reorganization because there is a nice sounding entity, National Oceans Administration; but one way or the other, the present organization doesn't seem to look so national.

And specifically, now with the 200-mile limit and the Coast Guard still over in the transportation department do you think it still belongs over there in order to enforce these fishing laws, or should we get it out of transportation and get it back into the oceans?

For years I have sat on this committee, and as long as they kept a couple of buoys up the Mississippi River and Kentucky and Ohio, the Senators are happy and they continue to get their budget. They are rather dormant, morale is low. I can say that; I have been on the Coast Guard Academy board.

I am trying to get them back into the oceans. They are talking transportation, to be loyal to the boss.

Now, we have an increase in size of the United States and increased responsibility, and what are we going to do about that?

Dr. McKernan. Mr. Chairman, personally I would prefer to see the Coast Guard in an oceans agency within Government.

I am not speaking for NACOA at the present time.

It is also discussing this question but has not arrived at a final consensus.

Senator Hollings. NACOA is studying this, Dr. Hargis?

Dr. Hargis. Yes, sir.

Senator Hollings. I see.

Dr. Hargis. Organization and policy and goals is another, and probably a most important area that we are concerned with that I did not mention.

Senator Hollings. I noticed that. I noticed you said that studies on marine transportation and education and climate and weather would be interrupted. But the importance of getting this thing organized you haven't mentioned.

Dr. Hargis. Merely an oversight on my part, sir.

Senator Hollings. I see.

With respect to the amount, Mr. Pollock, the NOAA Deputy Administrator, of course advises that we ought to stick with that $445,000, and you want to go up to $580,000. Again, what would be done with the additional funds?

Dr. Hargis. Well, the current situation, as you are aware, Mr. Chairman, is that we have been funded at this level of funding over the last several years of operation. And the best thing that I can do with

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your permission is to indicate to you that in the current year the funding has caused—this level of funding has caused problems to us.

I might add as an aside that we had asked for $650,000, in our original request, and the Secretary of Commerce approved that level. But OMB did not. This is of course, one of those situations where OMB disagreed with the Secretary. And with NACOA.

This year, in order to make ends meet, we had to eliminate the possibility of any field trips. This, I think, is damaging.

We also had to reduce a number of panel meetings away from or outside of the normal schedule of 11 meetings.

Furthermore, we had to do without the services of a highly important staff member to the tune of about $20,000, is that correct, Dr. Brooks?

And we had to forego serving the Congress and the Executive in some important issues, as rapidly as we would have liked. That last is hard to quantify but that is my impression of the circumstance.

Now, I think you can look at this matter in this way. We have been funded at this level since 1976. 1976 can be taken as a base year because in 1977 we had to cut back. We had to do without staff, without a staff person for a fairly long time. 1976 was the last year in which we did make field trips and did have our six interim panel meetings. Since 1976, the pay raise, the Federal pay raise has come along, and that costs us $26,000 more a year.

Deferring increases and waiting to fill GS–13 that we had at the time haved some money for 1976 and enabled us to get through with a balanced budget, but new pay increases brings the total for salaries up to $68,000 since 1976. In other words, keeping the positions filled and paying the pay raises that have occurred since 1976 will run us $68,000 more tthan 445.000. This doesn't count inflation, which we figure at the rate of about 7 percent. Or $31,000 per year or $62,000 for 2 years, which means that assuming the same level of operation as we had in the base year of 1976, we are $130,000 short. Based upon 18 members in attendance.

Now, if the membership is reduced we have refigured the whole business, and we find that we are still short, assuming say 15 members, we are talking about $542,000 to get by with no increase in staff, but including our two field visits.

Senator HOLLINGS. Well, now, Dr. Hargis, I think that the emphasis on your 18 members coming is good, and I think that is the intent of Congress.

Now, perhaps you folks could have gone to the west coast and it would have been a little cheaper on balance to have the Advisory Committee go to the west coast and listen and look thoroughly at some problem than having them come to Washington from Seattle and San Diego, all the way across the country. But to get you experts in town and then advise us, I think, is the real thrust. That is what you bring, expertise and your own experiences.

We have to keep the budget up but I don't know if we can provide a lot on travel. I guess we in Congress are getting oversensitive to it because of some of the international commissions and groupings and meetings.

I have just completed, I should say, a week's hearings on the State Department budget, and I think I will put in the Congressional Rec-

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ord that everybody's traveling everywhere. You ought to see it. You want to go on a trip? Everybody in this room can go at Government expense somewhere on some subject. I have never seen so many things to go to

We are going to get a grip on it. Now, to another subject. As an advisory group, to the Congress, has NACOA ever commented adversely or favorably on a piece of legislation officially?

Dr. HARGIS. Yes, sir, we have. One of the ways that I would judge productivity, and you understand I can be accused of some bias, that is, are the recommendations specific? If you go through the record you will find that we have tried to be quite specific, particularly where there were pieces of legislation being considered.

We urge the passage of the Coastal Zone Management Act with certain specific revisions, which we suggested. And we have done that twice, and we addressed specifically some of the Outer Continental Shelf measures that your committee was keenly interested in, and we addressed those in terms of numbers—306, 305 and that sort of thing—and specific amounts of money, specific changes in advisory committees in the case of the sea grant program and so that we have tried to be specific, and we have addressed legislation.

We have on occasion argued with OMB, specifically. And I am arguing again with them on this money business. So, that what I am saying is we have not been Pollyanna; we have not been general. We have been specific and we have argued where we felt that it was necessary, and we have come forward with testimony before your committee, before the relevant committees of the House in support of specific actions.

Senator HOLLINGS. Well, very good. We want to continue to hear from you. But I am on the Technology Assessment Board and we have an advisory committee that has been headed up by Dr. Harold Brown and Jerry Wiesner, and they seem to be riding me more than you have. They come to town and they have been advising and fussing at us and this is good. They have been very active. It's obvious that you folks have been very active and in good attendance, too.

We commend you for what you have been doing. We don't want to disrupt. But we want to get that thing tightened down to where they just don't offload a bunch of appointees and say, "We will see you later."

Again, Dr. Landsberg, if I can get the oceans to where you are in the weather, I will be happy. And willing to quit. But I just can't get this crowd into the oceans.

Dr. LANDSBERG. Let me just say, Mr. Chairman, there are a number of very important atmospheric parameters which affect the ocean. For example, the studies on the El Nino current, which is very important in fishery, well, this whole thing is an atmospheric phenomena that will start this particular thing. So they are tied together, there are no two questions about it.

Similarly, the fisheries in the Northeast are very severely affected by the weather. I will also mention, if you want to talk about oil slicks and oil spills, without weather problems you just simply can't get at it. I think it would be a severe mistake if you separated these. Because scientifically they belong together. I think even organizationally,

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I think that your problem is that the manning is not the way you would like to see it and I would agree with you on that.

Senator HOLLINGS. As you know, the Senate National Ocean Policy, which I have chaired, has recommended a Department of Environment and Oceans. Our friend Russell Train has agreed with the basics of this approach. We are trying to get an oceans program that is as strong as the present atmospheric activities.

I want to get some oceanographers running around doing as well as the atmospheric fellows.

Dr. HARGIS. Mr. Chairman, as you remarked, the atmospheric fellows have been doing very well. Their record of course is improving. One of the things we would like to go on record as agreeing with the Chair is that we feel that ocean affairs deserve a great deal more attention, and I personally, as you're aware of, urged establishment of oceanic programs including atmospheric if we could, but oceanic programs at the full Secretarial level.

I would like to see that happen. We are very much concerned with you about problems of committee economy and committee effectiveness. We have done as you suggested and we will look into the possibilities even more. We have scheduled meetings where the problems are so we wouldn't have to transfer the whole dad gum committee one place or another.

But we have not been out of town now on any kind of a trip for 2 years, and I feel that there is some lack here because as you know there are a number of facilities and programs on the west coast, Alaska, and South Carolina, Charleston, which do deserves some attention so that you know what you're talking about when you get back and try to give advice. If you're trying to obtain appropriate geographical spread, all 50 States, it is impossible not to have a fair amount of the committee's portion of the budget devoted to travel.

You have to get the people into Washington, or you have to leave them where they are. If you leave them where they are, then you don't get the full effectiveness.

Senator HOLLINGS. Very good. Senator Packwood?

Senator PACKWOOD. No question, Mr. Chairman, thank you.

Senator HOLLINGS. I appreciate your attendance and Senator Schmitt's here this morning. Gentlemen, we have a good ongoing committee here. We just want to see if we can beef it up. We would appreciate anything further that you would want to add later for the record.

Dr. HARGIS. Yes, sir.

Senator HOLLINGS. And while marking it up, we will be working with you.

Dr. HARGIS. We have the budget figures broken down according to a number of committee members. Variable number of committee members and we can provide those to the staff. I would like to say personally that after all is said and done, you have indicated that you would like the people to come up here and talk with you.

I hope I am around to talk with you after all of the flak settles this year.

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Senator HOLLINGS. Don't worry about it. Help me work out that tuna bill; we have got to do something about that thing. We got into that, Bob, on the tuna fishermen.

Senator PACKWOOD. I'm well familiar with the topic and the problem.

Senator HOLLINGS. Yes. Thank you very much. We appreciate your appearance here this morning. We will include in the record a telegram from Bill Nierenberg, and we will submit some questions to you, Dr. Hargis, that we would like NACOA to answer for the record.

The committee will be in recess.

[Whereupon, at 10:30 a.m., the hearing was adjourned.]

[The following information was subsequently received for the record:]

[Telegram]

APRIL 28, 1977.

From: Dr. William Nierenberg, Director, Scripps Institution of Oceanography, La Jolla, Calif., and former Chairman, National Advisory Committee on Oceans and Atmosphere.

SENATOR ERNEST F. HOLLINGS,
Committee on Commerce, Science, and Transportation,
Washington, D.C.

DEAR SENATOR HOLLINGS: I regret very much that I am physically unable to attend your very important hearings. But I take this opportunity to enter into the record my evaluation of NACOA and its activities, and what effect the proposals for change would have.

I believe the Committee has been very successful this last five years in doing exactly what the Congress of the United States wanted done. In order to be fully effective, given the scope the Congress has assigned to it, it is hard to see how an effective Committee could be designed with less than 24 members. More than most such advisory committees, reasonable geographical representation is essential. Five coasts of the United States, including Alaska and Hawaii, should be represented on the Committee from the oceanographic viewpoint. The Great Lakes Region needs separate representation. There must be a similar, though not quite as precise, spread for atmospheric matters.

In addition to this division of representation, we need various representatives from the different broad disciplines such as engineering, physical oceanography, marine geology, and biological oceanography. In the atmosphere sciences we would like representation from the fields of climatology, weather forecasting, and the related field of hydrology. Cutting across all is a sensitivity to issues of national defense.

I am a strong believer that there should be one or two public members. They have served very well in the past. I refer to people like Arthur Godfrey and William Lane. It has also been very important to us to have former members of Congress on the Committee. We certainly need representation from the fishing industry, and we find that one representative is not usually enough to cover the diversity of interests in that field. I feel that while there can be and has been fortuitous coalescence of some of these requirements in individuals, that twenty-four is a bare minimum to work with to meet the requirements.

Now at the risk of repeating myself, in a different dimension I believe that the proposed authorization is woefully inadequate to carry out the Committee functions enumerated in bill S. 1347.

In the early days of the Committee not as much support was required because of the necessity to pick and choose topics. But its expertise, stature, and influence have grown steadily to the point where the Committee's activities are close to encompassing the full gamut of Congressional demands. The authorization proposed, with a 24-member Committee, would be unequal to the tasks proposed.

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NATIONAL AVISORY COMMITTEE
ON OCEANS AND ATMOSPHERE,
Washington, D.C., June 24, 1977.

Hon. WARREN G. MAGNUSON,
Chairman, Committee on Commerce Science and Technology, U.S. Senate, Washington, D.C.

DEAR MR. MAGNUSON: The enclosed provides answers to questions that you asked subsequently to the hearings on S. 1347 on May 5, 1977.

Sincerely,

WILLIAM J. HARGIS, Jr.,
Chairman.

Enclosure.

ANSWERS TO QUESTIONS SUBMITTED TO NACOA BY THE SENATE COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION

Question 1. What steps has NACOA taken to ensure that its information and advice to the Congress are delivered in a useful and timely manner? For instance, does NACOA monitor Congressional proceedings and seek to help the Congress deal with pressing issues, such as the tuna-porpoise and tanker safety controversies?

Answer. NACOA maintains day-to-day contact with the Congress through a member of the NACOA staff assigned virtually full time to Congressional liaison. Other staff and individual NACOA members make occasional visits as feasible. We have developed a pattern of providing memos or arranging for testimony from NACOA members on issues on which NACOA has worked. We have also arranged for testimony from a NACOA member on issues where a member was an expert and could make a personal contribution. For other situations, we have sometimes been asked to identify non-NACOA expertise and helped arrange for its availability.

Question 2. Beyond preparing annual and special reports, what steps has NACOA taken to advise the Secretary of Commerce about the National Oceanic and Atmospheric Administration? For instance, does NACOA comment on major NOAA budget issues, in order to advise the Secretary about priorities?

Answer. In addition to its annual and special reports, NACOA prepares and transmits letters to the President, to Cabinet Members, Heads of Agencies and to Members of Congress, as appropriate, on both budget issues and on other issues that impact marine and atmospheric affairs. The vast majority of our advice to the Secretary of Commerce concerning NOAA is contained in our annual and special reports. Observers from NOAA and other agencies are active participants at our meetings, providing briefings on issues of current interest and participating in our discussions about these issues and their resolution.

Question 3. Can you give the Committee examples of where NACOA members or staff personally have communicated NACOA findings to Congressional Members or staff, briefing them and showing how your findings can help the Congress deal with pressing policy issues?

Answer. Such communications are too numerous to list. Letters and memos to individual Members of Congress cover such topics as U.S. merchant marine policies and programs, Outer Continental Shelf oil and gas matters, Sea Grant, etc. NACOA members and staff meet with Congressional Members and staff to discuss matters of mutual concern. A recent specific example is the briefing that was provided by a NACOA member, Mr. E. H. Clark, to the Ad Hoc Committee on the Outer Continental Shelf of the House of Representatives. The briefing was entitled, "World Wide Oil and Gas Outlook" Copies of the document covering the briefing were provided to the staff of the Senate Committee on Energy and Natural Resources.

Other examples of NACOA personal communication with Members of the Congress and Congressional staff members are worthy of note. The Chairman of NACOA accompanied the House Ad Hoc Select Committee on the Outer Continental Shelf during a field visit to the North Sea oil and gas production areas, which provided an unparalleled opportunity for the transmission of NACOA views and for the establishment of contact with members of the Ad Hoc Committee. A NACOA staff member accompanied the Ad Hoc Committee during field hearings in New Orleans, Los Angeles, San Francisco, Alaska and Boston which provided similar opportunities on the staff level. During NACOA's review of Sea Grant, the NACOA Sea Grant Panel and staff met with the NOPS staff to discuss mutual concerns and objectives.

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Question 4. Does NACOA ever ask to testify on pending oceans and atmosphere bills, or does it testify or submit its views after being requested to? Does NACOA take the initiative and seek opportunities to be of assistance to the Congress?

Answer. NACOA does both. Examples where NACOA has taken the initiative include testimony before the House Science and Technology Committee in July 1975 during their review of NOAA R&D activity and testimony before joint hearings of the Senate Commerce Committee and the Senate Interior and Insular Affairs Committee in April 1975 regarding legislation dealing with OCS oil and gas development and coastal zone management. It is fair to say that one of the major stimulants leading to consideration of both climate and weather modification legislation in the 94th Congress was the action of NACOA members and staff in urging that this be done. NACOA staff assisted in the identification of witnesses for the hearings and provided background information and briefing materials for the staff of the Senate Commerce Committee and the staff of the House Committee on Science and Technology.

Question 5. There are different kinds of information and advice that can be included in an annual report. Besides the identification and general discussion of major issues, the Congress also is interested in more specific kinds of information, including (i) the identification of basic policy options and analysis of their pros and cons, and (ii) seeing your ideas in forms that the Congress can use, such as draft legislation incorporating NACOA's recommendations about key issues. Has NACOA felt it important to include these other kinds of information in its annual and special reports? Does NACOA think it would be appropriate to include more of these other kinds of information and advice in future reports?

Answer. NACOA uses a number of ways of relating its recommendations to specific Congressional or Executive Branch activity. For example, where a bill generally suitable to the purpose is pending, we have specifically urged its passage or its amendment. Examples include legislation on coastal zone management, OCS oil and gas development, an extended fisheries resources zone, weather modification, climate, Federal branch organization, Congressional reorganization, Sea Grant, and others. We have found also that informal follow-up by individual NACOA members or staff to explain or amplify is helpful. In the Executive Branch, the many official agency observers provide excellent two-way communication.

A discussion of options with identification of pros and cons generally takes place during meetings, or in special work sessions and in staff papers. The Committee has generally understood that its responsibility is to apply its broad range of expertise and experience to complex issues at the policy level in order to render its opinion and advice. Where the Committee is divided, it is prepared to so state, with explanation, but it has so far been able to reach consensus on the issues which it has considered.

Question 6. Is NACOA's consensus rule useful? Why not set forth the pros and cons of different options? Would this not provide the Congress with a better understanding of the range of alternatives associated with a given policy issue?

Answer. Our experience is that the process of arriving at consensus among members of diverse expertise produces substantial judgments and advice, and is our primary duty. We would, in addition, be happy to undertake background studies with an educational purpose, but this is impractical without a much larger staff.

Question 7. Is too much time spent preparing the annual report? Would spending less time on the report free NACOA and its staff to spend more time directly assisting the Congress and the Executive?

Answer. On balance, we feel the mandatory annual report provides a kind of discipline which is useful in bringing our diverse membership into genuine consensus on well-considered positions. We would also like to increase our direct involvement with Congress and Executive on short-fuse issues, but our primary limitation for this is staff, as we have testified.

Question 8. Is your official mandate too broad, especially the present requirement that the annual report be "comprehensive"? Is S. 1347's use of the term "on a selective basis" an improvement?

Answer. The proposed inclusion of the phrase, "on a selective basis," referring to the coverage of the annual report would be an improvement, since as a practical matter we have had to take this approach anyway.

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Question 9. From looking at NACOA's prepared testimony, the Committee gathers that NACOA approves of the qualifications for membership included in S. 1347? Is this correct?

Answer. NACOA approves of the qualifications for its members that are included in S. 1347. We feel it essential, however, that there should be one or two public members. They have served well in the past. It has also been very important to us to have former Members of the Congress as members of NACOA. Section 103 of S. 1347 will permit this, but we would hope that this could be more specifically addressed in the report to accompany the bill.

Question 10. Like the present Act, S. 1347 directs that administrative support for NACOA be provided by the Commerce Department. Is there a conflict-of-interest here? Can NACOA turn around and evaluate the National Oceanic and Atmospheric Administration objectively?

Answer. In spite of the fact that administrative support for NACOA has been provided by the Department of Commerce, there has been no pressure, either from the Department of Commerce or from NOAA, on NACOA to do anything except make objective evaluations of marine and atmospheric programs with which they are concerned. Dr. White, in his testimony before the Subcommittee on Oceanography of the House Merchant Marine and Fisheries Committee on February 24, 1977, commented that NACOA's recommendations have been sometimes provocative but always of such a nature to be given the most serious consideration as the Executive Branch formulates policies and programs in marine and atmoshperic affairs.

Question 11. Please provide the Committee with a detailed justification for a budgetary increase, including specific cost increases that require a larger authorization.

Answer. See attached.

NACOA budgeting—fiscal year 1978

[In thousands of dollars]

Committee:	*Amount*
Travel and expenses	78.5
Compensation	64.4
Total	142.9
Staff compensation:	377.0
Benefits	36.2
Total	413.2
Staff travel	21.6
Total staff	434.8
Contracts:	
Support for chairman	19.0
Consultants	22.0
Steno services ($1.1 per mtg)	12.1
Total	53.1
Printing and reproduction	10.0
Supplies	2.0
Miscellaneous	4.0
Total	646.8

EXPLANATION OF BUDGET NEEDS FOR 1978

OBJECTIVES

1. Committee of 21 Members (average attendance of 18).
2. 11 meetings of 2 days each. Two of the 11 would be site visits (Hawaii, Seattle, Florida, Woods Hole, San Diego). The others in Washington.
3. Six panel meetings of 1 day each, five members attending.

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4. Staff increased by two professionals (GS–15).

Analysts	7
Administrative	1
Secretaries	5
Total	13

5. Document all meetings—contract stenotypist service.
6. Pay for several consultants—briefings, etc.
7. Provide chairman with home office support.

COMPARISON BETWEEN FISCAL YEAR 1976 EXPENDITURES AND FISCAL YEAR 1978 PLAN (BY OBJECT CLASS)—NO STAFF INCREASE

Object class	Fiscal year 1976	Fiscal year 1978	Increase	Explanation
Personnel compensation:				
Committee	56.5	64.4	7.9	10 meetings in fiscal year 1976; 6 separate panel meetings.
Staff	238.2	306.0	67.9	34,900 due to pay raises; 6,000 due to 3 mo without GS–13 staff assistant in?? 27 in-step increases.
Benefits	22.9	29.4	6.5	Same as for salaries.
Travel:				
Committee	67.5	78.5	11.0	7.2 due to inflation; 3.8 due to geographical redistribution of members and increase in attendance.
Staff	11.3	13.2	1.9	1.1 due to inflation; 0.8 due to increased activity.
Printing and reproduction	6.2	10.0	3.8	0.6 due to inflation; 3.2 due to increased activity.
Contracts	38.7	53.9	15.2	3.8 due to inflation; 11.4 due to anticipated increased use of consultants.
Supplies	.4	2.0	1.6	Due primarily to probability NACOA will have to pay for supplies.
Equipment/miscellaneous	1.7	4.0	2.3	0.2 due to inflation; 2.1 due to anticipated greater need.
Total	443.4	561.4	118.0	

Note: See table below:

Pay etc.:	
Pay raises	34.9
Step increases	27.0
No GS–13 assistant (3 mo)	6.0
Subtotal	68.0
Plus	6.5
Total	74.5
Panels	11.7
Consultants	11.4
Miscellaneous	6.8
Subtotal	104.4
Plus	12.9
Total	117.3
Inflation:	
Committee	7.2
Staff	1.1
Printing and reproduction	.6
Contracts	3.8
Equipment/miscellaneous	.2
Total	12.9
Increased activity:	
Panels	7.9
Geography	3.8
Reproduction	3.2
Consultants	11.4
Supplies	1.6
Miscellaneous	2.1
Total	31.0

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Added cost of 2 additional staff—(GS–15/1)

Personnel compensation	$70,956.90
Benefits	6,811.86
Total	77,768.76
Travel and expenditures	4,000.00
Grand total	81,768.76

NOTE.—+$400 added to travel and expenditures for inflation. Personnel compensation and benefits include 5 percent pay raise.

[The following information was referred to on p. 10:]

NATIONAL ADVISORY COMMITTEE
ON OCEANS AND ATMOSPHERE,
Washington, D.C., April 4, 1977.

Memorandum for: Assistant Secretary for Administration.
From: William J. Hargis, Jr., Chairman.
Subject: Annual Comprehensive Review of Federal Advisory Committees.

Attached is the Annual Comprehensive Review of the National Advisory Committee on Oceans and Atmosphere for Calendar Year 1976. It is my belief that responses to this Committee's recommendations from the Executive Branch and the Congress, whom this Committee was created to advise, indicate that there is a compelling need for its continuation.

Attachment.

FEDERAL ADVISORY COMMITTEE REVIEW COVERSHEET

1. U.S. Department of Commerce.
2. Name of committee as chartered: National Advisory Committee on Oceans and Atmosphere.
3. Was this committee established after January 1, 1977? No.
4. For closed or partially closed meetings, list for each meeting the date and number(s) of all FOIA exemptions used: March 15, 1976, exemption 1 of 5 U.S.C. 552(b). December 14, 1976, exemption 1 of 5 U.S.C. 552(b).
5. Operating unit recommendation for this committee:

(*a*) *Termination.*—If this is a committee established by statute, attach a brief explanatory statement for the recommendation and indicate whether legislation is required to carry out the recommendation and whether such legislation is contemplated or pending.

(*b*) *Continuation.*—Attach a justification statement describing what this committee does, why there is a compelling need for its continuation, and how it has a truly balanced membership. The statement should be on numbered bond sheets with the name of the Department, responsible operating unit and the committee on each. The justification should include details on the following and any other relevant factors.

(1) The number of times the committee has met in the past year and the relevance of that number to its continuation.

(2) The number of reports submitted by the committee in the past year.

(3) A description of how the committee's reports, recommendations, or advice have been used in agency policy formulation, program planning, decision-making, achieving economies, etc.

(4) An explanation of why the recommendations or information cannot be obtained from other sources, elsewhere within the Department, from other agencies or existing committees, public hearings, consultants, etc.

(5) An explanation of any degree of duplication of functions, purpose, etc., with other committees, or within the Department, or with other Departments and agencies.

(6) The relationship of the cost of the committee to the reports, recommendations, or information provided.

(7) In consideration of (*a*) the functions to be performed and (*b*) the points of view to be represented, specifically how the membership is balanced—the views, areas of expertise, etc., included.

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FEDERAL ADVISORY COMMITTEE REVIEW

JUSTIFICATION STATEMENT

The National Advisory Committee on Oceans and Atmosphere (NACOA), consisting of 25 non-Federal members appointed by the President from State and local governments, industry, science, and other appropriate areas, was established by Public Law 92–125, on August 16, 1971. Its duties are to (1) undertake a continuing review of national ocean policy, coastal zone management, and the progress of the marine and atmospheric science and service programs of the United States, (2) advise the Secretary of Commerce with respect to the carrying out of the purposes of the National Oceanic and Atmospheric Administration, and (3) submit a comprehensive annual report to the President and the Congress setting forth an overall assessment of the status of the Nation's marine and atmospheric activities on or before June 30 of each year, and such other reports as may be requested by the President and the Congress. The annual report is submitted to the Secretary of Commerce who prepares comments and recommendations on behalf of the Executive Branch and transmits these, together with the report, to the President and the Congress within 90 days after receiving it.

Our Nation's vital interest in the oceans and the atmosphere manifests itself in a variety of programs—many within the Federal Government, others run by State and local governments, by private industry, and by universities and other scientific and technical institutions. Areas of concern include national security, the merchant marine, marine minerals, fisheries, the coastal zone, waste disposal, air transportation, weather, and climate. Federal programs in these areas are dispersed throughout the government. They are found in many departments and agencies, often as a very small part of the agency's overall mission.

For most of these programs, within and without the Federal Government, advisory mechanisms exist to provide oversight and receive guidance from those not directly involved. Usually this oversight and guidance is of a technical nature directed toward the specific program of concern.

These advisory bodies are not, by their nature, suited to broad oversight over the entire gamut of marine and atmospheric programs which our Nation conducts. Existing bodies with broad responsibilities of that sort have other prime objectives—the President's Council on Environmental Quality is an example. There is a need for an advisory mechanism which is concerned with the overall national interest, which brings to bear expertise not solely scientific and technical, but also economic, legal, and managerial, and which concerns itself with broad policy issues of concern to the President, the heads of Federal departments and agencies, and the Congressional committees responsible for authorizing and funding our oceanic and atmospheric effort. It is NACOA's role to provide this perspective.

* * * * * * *

NACOA resulted from one of the two organizational recommendations of the Stratton Commission, which in 1969 published a report[1] which had a powerful and pervasive impact upon our Nation's ocean effort. The Commission called for creation of an independent National Oceanic and Atmospheric Agency reporting directly to the President, and an advisory committee to assist the new agency in developing its programs. NOAA as it exists today is not as all-encompassing as the Commission called for; to some extent NACOA's charge to report directly to the President and the Congress on all marine and atmospheric matters, not just NOAA's programs, compensates for this.

The Stratton Commission suggested a 15-member advisory committee to bring to the attention of Federal officials the views of qualified people from outside the Federal Government having an interest and expertise in oceanic affairs. The Congress, in creating NACOA, deemed it advantageous to combine oceanic and atmospheric matters in a single advisory committee with 25 members.

In the 5 years of its existence, NACOA's deliberations, recommendations, advice, and reports have dealt with many issues including: fisheries and other living resources of the sea; the extended resources zone; the outer continental shelf; coastal zone management; energy from the sea; marine transportation;

[1] "Our Nation and the Sea," Report of the Commission on Marine Science, Engineering and Resources, Washington, D.C., January 1969.

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marine waste disposal; freedom of research; the Sea Grant Program; ocean engineering; Law of the Sea; diving; Navy R&D; the ship GLOMAR EXPLORER; weather and air safety; climate change; weather modification; air pollution R&D; and national ocean policy. NACOA has reviewed and commented on programs within the Departments of Agriculture, Commerce, Defense, Interior, and Transportation, and the National Science Foundation, the Environmental Protection Agency, the Energy Research and Development Administration, and others.

The Committee has thus far issued five annual reports to the President and the Congress, as mandated by law, and four special reports directed to the Secretary of Commerce, the Administrator of NOAA, and the Director of the National Science Foundation. It has also responded to various requests for testimony at Congressional hearings and for written information for the use of Congressional committees.

NACOA's annual reports are submitted to the Secretary of Commerce, who trasmits them to the President and to the Congress along with his comments and recommendations. In practice, the Secretary's comments have represented the views of the agencies addressed by NACOA's recommendations, and thus reflect the Executive Branch's consideration of those recommendations. The recommendations presented in NACOA's 5th Annual Report, issued in 1976, and the Secretary's comments are summarized in Attachment #1 to this statement.

For some perspective on the value of NACOA as perceived by both the Executive Branch and the Congress, we quote from a statement by Dr. Robert M. White, Administrator of NOAA, during a hearing before the Subcommittee on Oceanography of the House Merchant Marine and Fisheries Committee on February 24, 1977. Dr. White stated:

"The accomplishments of NACOA since its establishment in October of 1971 are well known and documented in its annual and special reports. Under the leadership of the present chairman, Dr. Hargis, and of its first chairman, Dr. William Nierenberg, NACOA has established itself as an effective and independent assessor of the Nation's marine and atmospheric programs. From its earliest report which focused on the law of the sea, the rehabilitation of our fisheries, weather modification, and coastal zone management until its latest report which concerns itself with oceans policy, offshore oil and gas resources, energy resource development, and weather and aviation safety, the Committee's recommendations have been sometimes provocative but always of such a nature to be given the most serious consideration as the Executive Branch formulates policies and programs in marine and atmospheric affairs.

"NOAA's programs have been greatly influenced by NACOA's findings and recommendations. For example, from the outset the Committee stated its concern for the health of United States fisheries. It was NACOA, through its recommendations, that stimulated the preparation of a National Plan for Marine Fisheries. This plan, now approved by the Department of Commerce, is the most comprehensive blueprint for approaching our national fisheries problems ever put together and will be the framework of NOAA's fishery programs in the future. As another example, NACOA's special report on our weather warning system as a result of its analysis of the Hurricane Agnes disaster of several years ago, has led us to the present programs of modernization and strengthening of our weather warning systems.

"The Committee has taken strong positions on a wide range of ocean issues—on Coastal Zone Management, OCS development, Climate, Weather Modification, Ocean Engineering, Sea Grant—I could extend the list greatly. In each case the views and recommendations of the Committee have been most welcome.

"Mr. Chairman, I would like to conclude my remarks by stating that it has been a privilege to work with NACOA since its establishment in 1971, and I look forward to the Committee's wise counsel in the future."

Congressman John B. Breaux, Chairman of the Subcommittee, stated at that same hearing:

"As I look forward into the 95th Congress and the myriad of problems that face us, it becomes clear that there is an overriding need for an organization like NACOA. . . . There exists no easy solution for any of these extremely complex problems. Indeed, a sense of urgency is attached to many of them by the spectre of irreversible environmental damage caused by uncontrolled and irrational development. NACOA, because it provides a vital information link between Federal and non-Federal interests within the marine and atmospheric sectors, offers an invaluable resource in the quest to find solutions to these issues. With

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respect to NACOA's purpose, its membership serves as a unique and valuable source of expertise which is utilized in the preparation of reports, conducting meetings and workshops, and the formulation of advice. I along with others look to NACOA as a nonpolitical organization of experts in the field of oceanography and atmosphere . . . during the next few years we will see a large step taken in the direction of the establishment of something that has been talked about since the early 1960's, a comprehensive coordinated, and well defined national ocean policy. NACOA, in its capacity to provide information, expertise and advice, has an important role to play in this effort."

A report on ocean policy issues prepared by the Congressional Research Service on the basis of hearings conducted by the Oceanography Subcommittee in September 1976[2] states:

"The Federal Government has become enamoured of advisory committees. At the end of calendar year 1975, there were 1,267 committees in existence, involving 25,630 persons and costing $51.8 million. Forty-five of these advisory committees deal with ocean-related matters. Advisory committees are widely used within the executive branch at all levels of administration. To some extent they have become a symbol of participatory democracy, and have been skillfully used by some public administrators to dull the edge of criticism of 'closed decision-making.' A subset of the advisory committees, however, serves a higher order of purpose and plays a significant role in providing insights and policy options for highly complex and technical areas of policy to the President and the Congress.

"Falling within the latter class is the National Advisory Committee on Oceans and Atmosphere (NACOA). NACOA was created by the Congress in 1971 to provide advice to the President and the Congress on national marine and atmospheric affairs. NACOA serves as a comprehensive oversight committee for all Federal ocean and atmospheric programs. While the NACOA enabling act explicitly requires it to serve as an advisory body to NOAA, its broader legislative mandate makes it advisory to both the legislative and executive branches. The Committee is composed of 25 persons appointed by the President and selected from a wide range of disciplines in public and private life. The Committee's staff is currently appointed by the executive branch and is housed within the Department of Commerce. . . . Justification for the enlargement of NACOA responsibilities (accomplished by Public Law 94-69 in 1975) was stated in the House Merchant Marine and Fisheries Committee's report accompanying H.R. 5447.

" 'The Committee . . . urges that the National Advisory Committee on Oceans and Atmosphere play a greater role than ever before in advising and cooperating with the Congress as we work toward enacting the legislation necessary to ensure proper use and management of our oceans. We consider NACOA an important source of ideas, direction and influence and urge that they strengthen their ties with the Congress to give us the benefit of the unique but scarce talents that we urgently need at this hour in history.'

"NACOA's recommendations are generally well balanced and apolitical."

* * * * * * *

Answers to the specific questions posed in connection with this review follow.

(1) *The number of times the committee has met in the past year and the relevance of that number to its continuation*

The Committee met 11 times during 1976. Each meeting occupied approximately 1½ days. On the average, 18 of the 25 members were present at each meeting. Nine of the meetings were fully open; two had closed portions of 2 or 3 hours. Meetings typically had 40 observers present, including official observers from Executive agencies, and others from Executive agencies, the Congress, professional groups, industry, the public, and the press. Each meeting was conducted in accordance with a planned agenda, previously published, consisting of specific topics of critical importance.

The large number of meetings reflects the Committee's efforts to keep abreast of the subjects in its area of responsibility and to hear from all sides when considering controversial issues.

(2) *The number of reports submitted by the committee in the past year*

During 1976, the committee submitted two formal reports, its statutory Annual Report to the President and the Congress, on June 30, 1976, and a special

[2] "An Overview of National Ocean Policy Problems, Issues, and Administration." Committee Print, Serial No. 94-L, Committee on Merchant Marine and Fisheries, U.S. House of Representatives, 1976, pp. 8-9.

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report to the Secretary of Commerce on the National Sea Grant Program, on November 3, 1976. The former contained 64 pages of text, the latter 78 pages. In addition, the Committee testified at five Congressional hearings, responded to seven formal Congressional requests for information and recommendations, and wrote to the President on an urgent issue concerning preservation of a unique national oceanographic facility—the ship Glomar Explorer.

(3) *A description of how the committee's reports, recommendations, or advice have been used in agency policy formulation, program planning, decisionmaking, achieving economies, et cetera.*

The statutory requirement that the Secretary of Commerce prepare, on behalf of the Executive Branch, comments on NACOA's annual report, requires that the report be read and carefully considered by the many agencies whose programs are mentioned. NACOA recommendations are used by these agencies in planning new programs or modifying existing activities. NACOA's recommendations are quoted by Federal agencies in Congressional testimony, and NACOA's own testimony before the Congress assists that body in its legislative duties. In several instances NACOA's recommendations have resulted in organizational and planning activities in various agencies. Examples include NOAA's creation of an Office of Ocean Engineering, NOAA's development of a National Plan for Marine Fisheries, and NSF's undertaking of a series of workshops to plan a successor program to the International Decade of Ocean Exploration.

(4) *An explanation of why the recommendations or information cannot be obtained from other sources, elsewhere within the Department, from other agencies or existing committees, public hearings, consultants, et cetera*

NACOA's recommendations concerning the myriad of issues with which it deals represent the consensus of a broad base of expertise. Its members, appointed by the President for staggered 3-year terms from academia, State and local governments, and industry, are expected to represent, in the aggregate, the broad national interest, rather than that of scientists alone or of government or of academia, or any other single interest.

NACOA itself turns to other bodies—interagency committees, the Library of Congress, the Office of Technology Assessment, committees of the National Research Council, professional and industrial organizations—for information and guidance on specific issues. What sets NACOA apart is its role as a policy committee, rather than a technical body. Its role is essentially oversight and policy analysis rather than implementation and details. It considers economic, social, environmental, national security, and foreign policy aspects of the Nation's marine and atmospheric programs. It is the only body which cuts across all aspects of oceanic and atmospheric affairs in this way. Executive agencies and Congressional committees and their staffs have frequently turned to NACOA for just this perspective.

In addition, NACOA's reports are not subject to change by any agency in either the Executive or Legislative Branches, and NACOA has in the past taken positions contrary to those held within the Administration or in the Congress.

(5) *An explanation of any degree of duplication of functions, purpose, et cetera, with other committees, or within the Department, or with other Departments and agencies*

NACOA's responsibilities cover a wide range of activities spread throughout the Federal Government. There is, in a sense, partial overlap with interagency committees such as the Interdepartmental Committee for Atmospheric Sciences (ICAS), the Interagency Committee on Marine Science and Engineering (ICMSE), the Federal Committee for Meteorological Services and Supporting Research (FCMSSR), etc., with the Office of Science and Technology Policy, with the Council on Environmental Quality, and with the many boards and committees of the National Research Council. However, each of these bodies has its own well-defined function, and none is a close match to NACOA's in the sense of oversight of the national interest in all aspects of the oceans and the atmosphere.

(6) *The relationship of the cost of the committee to the reports, recommendations, or information provided*

Many NACOA members are highly paid executives whose services would not normally be available to the Federal Government on a contract basis, even at a cost far in excess of that at which they are compenstaed by NACOA. The

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Committee provides a mechanism by which the Nation can continually benefit from the collective wisdom of these individuals, applied to developing recommendations addressing major national and international issues. The cost of operating NACOA (approximately $440,000 in 1976) is small when viewed in light of the value of its members' experience, views and expertise, and of the worth to the Nation of their contributions.

(7) *In consideration of (a) the functions to be performed and (b) the points of view to be represented, specifically how the membership is balanced—the views, areas of expertise, et cetera, included*

NACOA members need to represent the views of the Nation as a whole, States and localities, industry and academia. They need to include experts in science, engineering, resource management, environment, economics, public affairs, law, and public service.

Many NACOA members have had long and distinguished careers in government, industries and universities, sometimes encompassing a number of professional specialties. These people cannot easily be categorized. But roughly speaking, the 23 members who served on NACOA from January to June 1976, and the 25 members who constituted the Committee from June through December 1976 contributed expertise in the following areas:

	January–June	July–December
Oceanic and coastal science	5	5
Atmospheric and hydrologic science	5	7
Fisheries	2	1
Marine minerals and geology	2	3
Ocean engineering	2	1
Marine transportation	0	1
Environment	1	1
Law and economics	2	1
Business and management	3	4
Public relations	1	1

These Committee members were drawn from the following sectors:

	January–June	July–December
Academia	8	9
Other research institutions	3	2
Business and industry	7	9
State and local government	2	2
Public service (foundations, et cetera)	3	3

ATTACHMENT 1

SUMMARY OF NACOA FIFTH ANNUAL REPORT RECOMMENDATIONS AND COMMENTS OF THE SECRETARY OF COMMERCE

I. POLICY AND PLANNING FOR MARINE AFFAIRS

Recommendation

NACOA recommended an ad hoc task force be established by legislation to formulate a comprehensive marine affairs policy, plan, and an adequate coordination mechanism.

Secretary's comments

Agrees with need for strong focus for planning and policy formulation. Outlines past attention given to ocean policy by the United States. Reviews new ocean legislation of the past 5 years. Does not believe that the lack of policies is the issue but it is the lack of a comprehensive approach to setting ocean policies.

Rather than executive/legislative task force to oversee the national ocean planning effort, the more traditional modes of cooperation between the Executive Branch and the Congress should be preserved. The former Presidential Commission on Marine Science, Engineering and Resources, established by Congress and composed of representatives of the Executive Branch and the private sector, with liaison members from the Congress was a good example of such a one-time national policy-planning and coordination-review mechanism.

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II. ENERGY FROM OFFSHORE SOURCES

Recommendation

As a nation we recognize the need to explore and develop offshore oil and gas resources consistent with enforceable, environmentally safe procedures.

Secretary's comments

Secretary Richardson quoted information from the Secretary of the Interior, who welcomed NACOA's recommendations and considers it essential that our government encourage industry to proceed with exploration drilling at a maximum responsible rate. Secretary Kleppe believes that industry has technological safeguards for environmentally safe exploration and development of offshore oil and gas.

The Administrator of the Environmental Protection Agency (EPA) generally concurred with the Interior but cautions that he cannot wholly agree with the committee's view, that the technical ability exists to safeguard the marine environment in drilling. Does agree that it would be beneficial to more effective and more economical energy development to separate the environmental impact assessments into phases of exploration and development. Secretary Richardson concurred with this latter statement by EPA.

III. THE SEA GRANT INFLUENCE

Recommendation

Increase funds over the next 3–5 years from the present $23 million per year to $40 million per year.

Amend the Sea Grant Act to provide additional earmarked funds free of the matching funds requirement.

Improve operation of the program, clarifying its goals and setting its priorities within the national context.

Improve Sea Grant proposal review process.

Clarify function, composition and tenure of the Sea Grant Advisory Panel.

Secretary's comments

Extension of the Sea Grant Program will depend upon the national picture and the level of funding for similar marine resource research and development activities. Notes that Congress has decided to increase the funding of the Sea Grant Program by $4 million for Fiscal Year 1977.

Believes that the Sea Grant Program should continue to be directed towards local and regional problems, and that its funding continue to remain of a matching nature.

Is directing the Administrator of the National Oceanic and Atmospheric Administration (NOAA) to review the Sea Grant Program and to make revisions to accomplish the objectives set forth by the committee. In his view the Sea Grant Advisory Panel has performed outstandingly—but does not agree it is desirable to have a system of rotation of the panel members.

IV. ENERGY RESEARCH AND DEMONSTRATION.

Recommendation

That the Energy Research and Development Administration (ERDA) establish a Directorate for oversight of energy research to advise the Administrator, in balancing the many simultaneous avenues now being explored and assist in shifting priorities.

Secretary's Comments

Dr. Seamans, Administrator of ERDA, informed the Secretary that the balanced program approach endorsed by NACOA in the proposed Directorate for Oversight of Energy Research is already embodied in the current ERDA organization.

V. AIR POLLUTION RESEARCH AND DEVELOPMENT

Recommendation

That the Environmental Protection Agency (EPA) continue to maintain a strong R&D capability to support near-term regulatory functions, and conduct longer-term basic research to the extent that resources permit.

That lead-agency designation be accorded to the National Institute of Environmental Health Sciences for human health and disease; to NOAA, for the atmosphere and the oceans; to the Department of the Interior (DOI) for plant and animal life on land and inland waters.

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That the Council for Environmental Quality (CEQ) lead a high-level, interagency coordinating committee for policy guidance, establishment of priorities, and coordination of research programs.

Secretary's comments

The Administrator of EPA agrees that there is not adequate scientific effort on the nation's longer-range problems of pollution control and environmental management. EPA's resources have never allowed it to meet all of its research needs, neither short term nor long term. EPA urges that any agency that has the necessary authority undertake whatever environmental research is within its competency. EPA, R&D program is responsive to the Agency's mission needs.

Secretary Richardson stated that, with the recent passage of the National Science, Engineering, Technology Policy and Priority Acts, he expects that there will be a review of all the science and technology coordination mechanisms within the Federal Government.

VI. WEATHER AND AIR SAFETY

Recommendation

That the Federal Aviation Administration (FAA) put further emphasis on early recognition of deteriorating weather situation in civilian pilot training;

That the National Weather Service (NWS) improve the quality of aviation weather information;

That aviation weather expertise be put back into the traffic control environment; and

That agreements between the National Weather Service and the Federal Aviation Administration, splitting the responsibility for aviation weather service, be reviewed and updated.

Secretary's comments

The Secretary welcomed the suggestions of the committee for improved aviation weather services. Many of these improvements would require substantial new Federal investments. He outlined a number of near-term improvements which were being jointly pursued by NOAA and the FAA. Both FAA and NOAA are working on present standards for weather instruction to pilots and controllers to insure adequate weather education. NWS is devising computer programs to perform quality control checks on aviation weather observations. Believes that it is in the best interest of aviation that we continue to take full advantage of the unique capabilities of both the FAA and NOAA. The agreement now covering the work of these two agencies is being revised and updated in light of the committee's comments. (Agreement signed by NOAA and FAA, January 1977.)

VII. SOME MARINE MATTERS

Recommendation

That research be directed toward development of tables and procedures to allow more rapid decompression of divers. An additional $3.5 million should be directed toward these research efforts. That the Department of Defense (DOD) insure that increasing reliance on non-DOD sponsored research not have deleterious effect on Navy technical posture; and that the Navy initiate efforts to increase the direct involvement with its laboratories of younger faculty members.

Secretary's comments

Concurred that research on decompression theory and the development testing of tables and procedures allowing more rapid diver decompression is needed. Recommendation of the committee will be given due consideration as we formulate underwater programs. The Secretary made note of the fact that Navy funding of diving medical research is expected to increase by approximately $3 million over the next 3 years.

The DOD will consider NACOA's comments on non-DOD research and involvement of younger faculty members in its program formulation.

VIII. SOME ATMOSPHERIC MATTERS

Recommendation

That the Congress enact legislation such as the National Climate Program Act of 1976, to provide a comprehensive climate program. Recommends action by the Executive Branch or by the Congress to give NOAA responsibility for coordinating and managing a coherent Federal program of weather modification research and experimentation.

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Secretary's comments

Concurred in need to develop better understanding of the dynamics of climate and ability to anticipate climate change. Both National Science Foundation (NSF) and NOAA programs have been substantially increased.

Recommendations of the committee on Weather Modification are appreciated. The Report of the Domestic Council Subcommittee on Climate Change, which made a series of recommendations in this field, is still under review within the Executive Office of the President. Shares the committee's views which are similar to those expressed in the Domestic Council's Subcommittee Report.

IX. SHORTER COMMENTS

NACOA stated its interest in maintaining the GLOMAR EXPLORER, a ship with remarkable capabilities, as an integral system for at least 1 year to give government and industry the opportunity to determine what the ship can do. The committee stated its continuing interest in NOAA's efforts in national fisheries planning. NACOA stated its intent to pay close attention to the progress of efforts to safeguard the coastal zone against adverse impact. It indicated its concern that enactment of amendments to the Coastal Zone Management Act would have serious impacts on the Office of Coastal Zone Management (OCZM), and could produce a shortage of personnel trained in coastal zone matters at both State and Federal level.

Secretary's comments

The views of the committee will be taken into consideration as decisions are made with regard to the future of the GLOMAR EXPLORER.

The Secretary is gratified by the comments and the progress being made with the national plan for marine fisheries, first stimulated by recommendations of NACOA. Many of the critical policy issues reflected in the original draft have now been resolved by the Congress, with the enactment of the Fisheries Conservation and Management Act of 1976.

The Secretary commented that he believes the new Energy Impact Fund provides a unique mechanism to assist states to accommodate the impacts of energy development in coastal areas. He stated his appreciation of the attention which the committee has given to the problems of the coastal zone over the past 5 years.

ATTACHMENT 2

The Committee's membership consisted, from January through June 1976, of 22 white males and one white female, and from July through December 1976, of 24 white males and one white female. By statute, NACOA members are appointed by the President.

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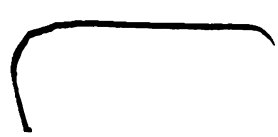

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